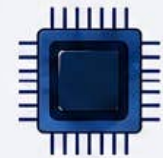
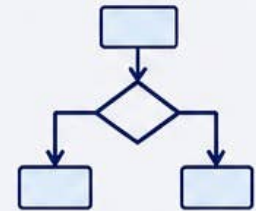




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Syllabus



Major Course: Advance Python Programming

Level	Semester	Course Code	Course Name	Credits	Teaching Hours	Exam Duration	Max Marks
5.5	V	112215	Advance Python Programming	2	30	2 Hrs.	30

Course Objectives:	1. To understand and apply Python data structures for solving computational problems. 2. To develop skills in file handling using Python modules. 3. To learn pattern matching and text processing in Python modules. 4. To understand object-oriented programming concepts in Python.						
Course Outcomes:	Students will be able to: 1. Discover the need for working with the strings Method. 2. Illustrate the process of structuring the data using lists, dictionaries, tuples and sets. 3. Indicate the use of regular expressions and built-in functions to navigate the file system. 4. Infer the Object-oriented Programming concepts in Python.						
Unit System	Contents				Workload Allotted	Weightage of Marks Allotted	Incorporation of Pedagogies
Unit I	Strings and Lists: Basic string operations, string indexing and slicing, string formatting, commonly used string methods, creating lists, list operations, indexing and slicing in lists, built-in functions used on lists and list methods. Dictionaries: Creating Dictionary, Accessing and Modifying key:value Pairs in Dictionaries, Built-In Functions Used on Dictionaries, Dictionary Methods, The del Statement				8 Hrs.	8 Marks	Use any pedagogical technique suitable for the topic
Unit II	Tuples and Sets: Creating Tuples, Basic Tuple Operations, Indexing and Slicing in Tuples, Built-In Functions Used on Tuples, Relation between Tuples and Lists, Relation between Tuples and Dictionaries, Tuple Methods, Using zip() Function, Sets, Set Methods, Traversing of Sets, Frozen set.				7 Hrs.	7 Marks	
Unit III	Files: Types of Files, Creating and Reading Text Data, File Methods to Read and Write Data, Reading and Writing Binary Files, The Pickle Module, Reading and Writing CSV Files, Python os and os.path Modules, Regular Expression Operations: Using Special Characters, Regular Expression Methods, Named Groups in Python Regular Expressions, Regular Expression with glob Module..				8 Hrs.	8 Marks	

Unit IV	Object-Oriented Programming: Classes and Objects, Creating Classes in Python, Creating Objects in Python, The Constructor Method, Classes with Multiple Objects, Class Attributes versus Data Attributes, Encapsulation, Inheritance, Polymorphism.	7 Hrs.	7 Marks	
References:	Course Material/Learning Resources Text Books: 1. Reema Thareja, Python Programming: Using Problem Solving Approach, Oxford University Press. 2. Eric Matthes, Python Crash Course: A Hands-On, Project-Based Introduction to Programming, No Starch Press. 3. Allen B. Downey, Think Python: How to Think Like a Computer Scientist, O'Reilly Media. 4. Martin C. Brown, Python: The Complete Reference, McGraw Hill Education. 5. Paul Barry, Head First Python, O'Reilly Media. Reference Books: 1. Mark Lutz, Learning Python, O'Reilly Media. 2. David Beazley and Brian K. Jones, Python Cookbook, O'Reilly Media. 3. Al Sweigart, Automate the Boring Stuff with Python, No Starch Press. 4. Mark Summerfield, Programming in Python 3: A Complete Introduction to the Python Language, Addison-Wesley. 5. Luciano Ramalho, Fluent Python, O'Reilly Media. Weblink to Equivalent MOOC on SWAYAM if relevant: 1. https://onlinecourses.swayam2.ac.in/e-learning/preview/cec26_cs01 2. https://onlinecourses.swayam2.ac.in/e-learning/preview/aic20_sp33 3. https://www.coursera.org/specializations/python?utm_source 4. https://developers.google.com/edu/python?utm_source Weblink to Equivalent Virtual Lab if relevant: 1. https://python-iitk.vlabs.ac.in/ 2. http://vlabs.iitb.ac.in/vlabs-dev/labs/python-basics/index.html 3. https://www.vlab.co.in/broad-area-computer-science-and-engineering Any pertinent media (recorded lectures, YouTube, etc.) if relevant: 1. https://www.youtube.com/watch?v=t2_Q2BRzeEE&list=PLGjplNEQ1it8-0CmoljS5yeV-GIKSUEt0 2. https://www.youtube.com/watch?v=6i3EGqOBRiU&list=PLdo5W4Nhv31bZSiqiOL5ta39vSnBxpOPT 3. https://www.youtube.com/live/Yrtm7d3TJbs?si=5_7EumDayLB8BHO0 4. https://youtu.be/UrsmFxEIp5k?si=G1GkZEFysrSU9dRH 5. https://youtu.be/AEE9ecgLgdQ?si=cFT2eJyNDPtnxrGs			

Assessment Rubric: Internal for Theory Course (Major)

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI THEORY EXAMINATION B.Sc. III, SEMESTER – V (NEP)			
Theory	Course Code: 112215	Course Title: Advance Python Programming	Max Marks: 20
Sr. No.	Assessment Criteria		Marks
1	Any Two of the Activity (weekly or monthly assignment/ Unit Test/Class Test) (CAT-1)		10
2	Any One of the Activity includes Open Book Test, MCQ Tests, / Theory related Class activity/Task etc.) etc. (CAT-2)		5
3	Participation in any one Activity includes Quiz, Seminar, Group Discussion, Industry visit, Case Study, Mini project, innovative work, etc. based on Theory Course. Involvement in subject related activities such as Conference, Workshop, Coding Competitions etc. (CAT-3)		5